Large-scale Map of the Salonika Battle Front. (London: J. W. Bacon and Co., Ltd.) Price 1*s*. net on paper, 1*s*. 6*d*. net on cloth.

THIS map, on a scale of 5 miles to 1 in., shows the country to the north of Salonika as far as lat. 42° 10′ N., and east to Kavalla and west to Monastir. It is layer coloured, and the contour interval is 1000 ft. International boundaries are clearly shown, and a red line indicates the approximate position of the Allies' front. Railways and main roads are shown, as well as swamps. The map is carefully executed and contains plenty of names. No doubt it could be improved by the addition of a 500-ft. contour line, but it is the best cheap war map of this region which has yet appeared.

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

Talbot's Observations on Fused Nitre.

AMONG the little remembered writings of that remarkable man, H. F. Talbot, there is an optical note in which he describes the behaviour of fused nitre (nitrate of potash) as observed under the polarising microscope. The experiments are interesting and easily repeated by anyone who has access to a suitable instrument, by preference one in which the Nicols can be made to revolve together so as to maintain a dark field in the absence of any interposed crystal.

"Put a drop of a solution of nitre on a small plate of glass, and evaporate it to dryness over a spirit-lamp; then invert the glass, and hold it with the salt downwards and in contact with the flame. By this means the nitre may be brought into a state of fusion, and it will spread itself in a thin transparent film over the surface of the glass.

"Removed from the lamp it immediately solidifies, and the film in cooling cracks irregularly. As soon as the glass is cool enough, let it be placed beneath the microscope (the polarisers being crossed, and the field of view consequently dark)."

I have found it better to use several drops spread over a part of the glass. And instead of inverting the plate in order to melt the nitre, I prefer to employ the flame from a mouth blow-pipe, caused to play upon the already heated salt. The blow-pipe may also be used to *clean* the glass in the first instance, after a preliminary heating over the flame to diminish the risk of fracture. Further security is afforded by keeping down the width of the strip, for which half an inch suffices.

Talbot describes how, under the microscope, there appear crystalline plates of irregular shape, often fitted together like a tesselated pavement, each plate forming a single crystal. If one plate is darkened by rotation of the Nicols, the others remain visible in varying degrees of brightness. If the plates are thin, the light is white; but with more salt they display colour, and the colour is not always uniform over the whole plate, indicating a variable thickness. But this condition of things is not permanent. After perhaps a quarter of an hour the plates break up in a surprising fashion, and the general appearance is totally changed.

Moreover, the transformation may be accelerated. "Let a film of fused nitre be obtained in the manner already mentioned, and let it be allowed to cool during three or four minutes. The plate of glass should be turned round upon the stage of the microscope until the crystalline film is darkened as accurately as possible. Things being thus adjusted, let the observer touch the film with the point of a needle while he is observing it in the microscope. He will perceive that the touch immediately produces a luminous spot on the dark surface, and this spot will slowly expand itself in all directions like a luminous wave. This is a very curious object, but difficult to describe." And further on:—"If, however, we touch it prematurely, as, for instance, during the first minute after it has become solid, this change does not take place."

I have made a few trials to ascertain whether the life of the plates can be prolonged. Protection from atmospheric moisture did little good. Another plate, kept for five hours at a temperature not much short of that of boiling water, was found to have undergone transformation. But, as might be expected, a higher temperature over a diminutive gas flame acted as a safeguard, and the plate after removal behaved like one newly formed.

I have found that nitre may be replaced by *chlorate* of potash, with the advantage that the plates will keep (at any rate in an artificially warmed room) for weeks, and perhaps indefinitely. The appearances are similar, but less beautiful, as colour is not so often developed. The chlorate is more fusible than nitre, and the heat should not be pushed beyond what is needed for fusion.

Other salts—for example, silver nitrate—which fuse in the anhydrous state without decomposition may also be employed, as is probably known to those who prepare objects for the microscope. But Talbot's early observations on nitre are rather special, and deserve recall as they seem to be but little known.

RAYLEIGH.

"Plants in Health and Disease."

ON p. 331 of NATURE of December 28, 1916, the writer of the review of the book entitled "Plants in Health and Disease" remarks:—"The accounts of such pests as the cabbage-root fly and the onion fly, which have been very active this year, are particularly clear. We could only wish that the measures whereby these pests are to be combated were half as good." With reference to the cabbage-root fly, I am glad now to be able to report that an efficient measure for dealing with that widespread pest has been tested under my direction during the past season.

Mr. J. T. Wadsworth, research assistant in this department, has conducted a series of experiments with American tarred felt paper discs, and a full account of the work will appear in the next issue of the *Annals of Applied Biology*. The tarred felt discs each measure 2½ in. square, and are provided with a slit which enables them to be slipped round the stems of young cabbages and cauliflowers so soon as the latter are planted out in the field. Each disc is pressed flat upon the surface of the soil round the plant, and no further attention as a rule is needed. Its primary function is to act as a mechanical obstacle, preventing the flies from laying their eggs on the soil in the usual position, close around the plant. Out of 816 cabbages used in these experiments, half of them were provided with the discs, and the remainder left unprotected. Only one plant was lost out of the 408 protected examples, while fifty-four unprotected cabbages were severely attacked. With regard to cauliflowers, the results were even more striking. Alto-

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gether 932 of these plants were utilised, and, similarly, half were provided with the discs and the rest left unprotected. From among the protected cauliflowers twenty-four were lost, as compared with 294 plants out of a similar number of unprotected ones. One of the advantages of this method over the more familiar use of paraffin and sand or soot is that a single application is sufficient, whereas the other remedies have to be reviewed periodically.

In addition to Mr. Wadsworth's experiments, I supplied three growers with the American discs, giving full instructions as to their manipulation. One grower at Chorlton (near Manchester), who was supplied with 100 discs, reported that no single case of root-maggot attack was noted where they were used. Another grower, at Prestwich (Cheshire), wrote to say that he had fifty cabbages with the discs on, and only two of them were attacked. Out of the fifty control plants most of them were infested. The third observer (at Nottingham) used 100 discs, and reported that out of eighty-four protected cauliflowers only five were apparently attacked, and none were lost. From among twenty unprotected plants only twelve survived.

It is remarkable that a simple and effective measure should have attracted so little attention in this country or elsewhere in Europe. It appears to have been overlooked that its value has frequently been demonstrated in Canada and the United States. I may add that we hope to be able to have a supply of tarred felt paper discs available for use in this country during the forthcoming spring, when every effort will be needed to conserve the food supply of the nation.

A. D. IMMS.

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The Decimal System and Summer Time in France.

THE frequent references to the necessity of introducing the decimal system which one reads in the public Press at present suggest some considerations which an experience of more than two years with the B.E.F. has confirmed. It is surprising with what facility the average soldier becomes accustomed to French money. Everything out here is bought and paid for on the decimal system. The men and officers receive their pay in French money. I have seen bills made out and paid by officers' orderlies which show they are quite at home in the French system. It is, of course, perfectly evident that the time gained in schools and colleges, if we were to replace many confusing weights and measures now in use by the decimal system, would be of great importance. Here in France half a kilo is called a pound; a sou is called a halfpenny. There would be no need for us to change familiar names if we are lucky enough to adopt the decimal system. It may be said that everybody out here has become familiar with decimal money, weights, and lengths, and knows roughly the ratios between them and corresponding British measure. The present opportunity is one which ought not to be missed. The stern teacher—war—has taught us to give up so many of our out-of-date ways that the imposition of the decimal system would soon be an accomplished fact if our rulers would only listen to those who really know.

This naturally suggests some facts connected with the introduction of "summer time." Whatever advantages that measure may have had from the point of view of those living in large towns, and of those whose time is their own (and they are many), it must certainly be confessed that in the case of the farming class in France it has been a complete failure. In fact, it exists only in name. I have spoken with the farmers on the subject, and they all assured me that it was no good to them. The hottest time of the day is about 2.0 p.m. Now, according to the summer-time programme, the greatest heat corresponds to 3.0 p.m. If, then, the farmer dines at noon (which is universal) he must do his afternoon's work during the hottest hours of the day. As a matter of fact, the farmers make no change in their habits. Many of them do not change their clocks, and dine at 1.0 p.m. according to summer time. But see the result. The schools must follow the legal time, the children get home for their dinners an hour before the family has begun to dine, with the result that there is the greatest confusion in a household, especially where the mother has to work in the fields. Again, there is the disadvantage that those occupied with cattle, as in Ireland, have an extra hour of darkness for their most important industry.

The case of Ireland is especially hard. Since the abolition of "Irish time" there is already an extra half-hour of darkness in the mornings; if the clock in Ireland is put back another hour it will mean that in many places the extra darkness in the mornings will be more than an hour and a half. It seems to the writer that the greatest care should be taken before the present system of summer time is made perpetual. It would be much better and much more scientific and more straightforward if the opening hour of all public offices, etc., was advanced an hour, and their time of closing treated in the same way. In conclusion, I may add, as a proof of the confusion which exists in some parts of France, the list of services in the parish church had to be written in two columns, the legal time being in ordinary figures, the summer time in Roman numerals.

C. F.

France, January 22.

Meldola Memorial.

A MOVEMENT has recently been initiated to institute, at the Finsbury Technical College, a reference library of chemical books in memory of the late Prof. Raphael Meldola, F.R.S., who formerly presided over this school of applied chemistry.

We beg to bring under your notice this appeal, which has met with generous support from many former students of Prof. Meldola, because we believe that his other friends outside the college circle would welcome the opportunity of helping to make this memorial a fitting tribute to a strenuous life spent in the pursuit of science in many varied aspects.

The proposed chemical library would be of the utmost utility to past and present students of this college, and, in all probability, suitable arrangements could be made to render it available to the scientific public for purposes of special references. It would be situated in a part of London where such facilities are at present non-existent.

Donations towards the memorial fund would be greatly appreciated by the undersigned committee and by all who have at heart the development of applied chemistry, a branch of science which the war has shown to be of national importance.

J. L. BAKER (*Hon. Treasurer*).
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